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U. S. Department of Agriculture

GARDEN FERTILIZERS:

A radio interview conducted by R. H. Lamb and Bobb Nichols from information prepared by Dr. C. C. Fletcher, Bureau of Chemistry and Soils, and W. R. Beattie, Bureau of Plant Industry, United States Department of Agriculture, and presented during the Western Farm and Home Hour Tuesday, March 15, 1932, through Station KGO and seven other stations associated with the NBC-KGO network, Pacific Division, National Broadcasting Company.

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ANNOUNCER: Bobb Nichols, our smiling producer -- excuse me, I forgot that you can't see that smile, but nevertheless, it's there -- seems to be going in for a little amateur gardening. At any rate, I find that he has a list of questions and has asked Ralph Lamb to hold himself in readiness to answer them. Well, Bobb, suppose you continue from this point.

NICHOLS: Jennings, I feel that I should modify one of your statements -- my gardening activities will be done by proxy only -- that is, just on this program. But I do number among my immediate friends, several who would like to have certain questions answered. Here is a typical question, Ralph: "Tell me the best way to improve the soil of my garden?"

LAMB: I see, Bobb, that it's your policy to grasp the bull firmly by the horns without any preliminary gestures. But like the marines, I believe I have "the situation well in hand" -- thanks to Dr. C. C. Fletcher of the Bureau of Chemistry and Soils. Now, getting back to your question -- One of the best ways to improve the soil of a garden is to give it a good coating of manure.

NICHOLS: Yes, my slight knowledge of farming agrees with that. Suppose, though, that manure is not available. What then?

LAMB: In that case, a good substitute for manure is to grow soil-improving crops on your land and turn them under. Then supplement this cover crop with commercial fertilizers.

NICHOLS: But suppose, Ralph, I need all the space I have for growing vegetables, and I therefore do not have the room for growing soil-improving crops. What can be done about that?

LAMB: These soil-improving crops can be grown on the land late in the season after the vegetables come off. Often times, rye or some other cover crop can be sown before such crops as late sweet corn, tomatoes or cabbage are harvested. By the time those vegetables are out of the way, your winter cover crop has a good start.

NICHOLS: This cover cropping requires planning, I see. Might be possible another year, but there's this year to be considered. If my land is only in fair condition now, what can be done to improve its fertility this season?

LAMB: In that case, you will have to depend mainly on chemical fertilizers this year. Your soil improvement program can be started during the summer or early fall.

(over)

NICHOLS: Fair enough. Now, Ralph, tell me about the kinds and amounts of commercial fertilizers to use in order to get the largest crops at the lowest cost per bushel, pound, or whatever the unit may be. Can the fertilizer be applied all at one time, or -- ?

LAMB: To a large measure, yes. After plowing, you can broadcast say about 1,000 pounds of a 4 - 12 - 4 or a 5 - 10 - 5 fertilizer per acre and harrow or rake it into the soil, depending on the size of your garden plot. For early crops, a mixture somewhat higher in nitrogen, such as a 7 - 6 - 5 mixture, is often desirable. In some sections, gardeners use a ton of fertilizer per acre for the initial application. That is usually sufficient to grow most crops, but top-dressings and supplemental applications are often advantageously used for special crops.

NICHOLS: What do you mean by a 4-12-4 and a 5-10-5 fertilizer?

LAMB: The first figure stands for nitrogen, the second for phosphoric acid and the third for potash. For example, a 5-10-5 fertilizer would contain 5 per cent nitrogen, 10 per cent of phosphoric acid, and 5 per cent of potash. Expressing it another way, each 100 pounds of the fertilizer would contain 5 pounds of nitrogen, 10 pounds of phosphoric acid, and 5 pounds of potash.

NICHOLS: Phosphoric Acid? Is that the same as superphosphate, Ralph?

LAMB: No indeed. Superphosphate is the treated phosphate rock, so Dr. Fletcher tells us. It was formerly called acid phosphate. It has no acid affect on the soil, so this old and misleading name was dropped. Treated phosphate rock is now correctly termed superphosphate. It contains varying amounts of available phosphoric acid, usually from 16 to 20 per cent, and is our main source of phosphoric acid in fertilizers.

NICHOLS: After being so far wrong in my last question, I rather hesitate to ask another --

LAMB: Don't let that worry you, Bobb.

NICHOLS: What about lime, Ralph? I've heard you mention the desirability of liming certain of our western soils; does that hold true with our garden soils?

LAMB: Well, lime is sometimes needed on garden soils, but not always. In fact, some soils already have too much lime in them. Then, the lime requirements of various vegetables differ. Potatoes are liable to be injured by scab if the land is too heavily limed, or if an excess of lime is found naturally in the soil. On the other hand, beets want a reasonable amount of lime in the soil on which they are grown. Lime is used to correct acidity in our soils and most of our garden vegetables do best on soils that are just about neutral or perhaps a trifle on the acid side.

NICHOLS: Well then, it would be best to make sure whether the soil really needed lime before applying it?

LAMB: Yes, it would. Your nearest County Agricultural Agent would be

the man to contact.

NICHOLS: Suppose -- here I go, supposing again -- suppose the soil test showed the soil to be acid and therefore needing lime; what form of lime is recommended?

LAMB: The form really isn't so important as the right amount. Dr. Fletcher recommends the finely ground limestone. Hydrated lime and fresh ground lime are all right, he says, but you have to be a little more careful in using them.

NICHOLS: How should the lime be applied?

LAMB: It is best applied by thoroughly mixing it with the top soil well in advance of planting. The burned lime and hydrated lime become carbonated in the soil and are then as safe to use as ground limestone. There may be danger of injuring the plants from the use of fresh lime and to a lesser degree from hydrated lime where they are not applied well in advance of planting. There is practically no danger from ground limestone if used in normal quantities. Ground limestone is difficult to procure in small quantities, while hydrated lime is easy to get in 50-pound paper bags.

NICHOLS: One more question, Ralph. Will it pay the average gardener to make a compost heap?

LAMB: According to Dr. Fletcher, the answer is yes. Where the gardener has the labor to spare, it will pay him to make a compost heap. Use sods, leaves, manure, cleanings from the poultry house, anything you can get of an organic nature. Then add a little superphosphate and wet down the heap so that it will rot. You can use the compost to advantage in your melon and cucumber hills and a shovelful under a tomato or eggplant will sometimes double the yield of fruit.

ANNOUNCER: Thanks to Bobb Nichols and Ralph Lamb, a few of the questions, at least, that we amateur gardeners are prone to ask have been answered.

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